

Subail

1. An adaptive cruise control apparatus for a vehicle, comprising means for sensing a speed of the vehicle, means for detecting a distance between the vehicle and a preceding vehicle, means for accelerating/decelerating the first-mentioned vehicle, and means for detecting a traveling environment, in which when the distance between the first-mentioned vehicle and the preceding vehicle is greater than a set value, a preset cruise speed is maintained whereas when the distance between the first-mentioned vehicle and the preceding vehicle is less than the set value, the distance is maintained at a predetermined value, and in which, responsive to a predetermined operation excluding operations of a cancel switch and a main switch based on a driver's intention of canceling the ACC terminating immediately after the cancellation of the ACC, the driver driving the first-mentioned vehicle, a cruise speed is selected depending upon a traveling environment to be encountered at that time to automatically resume the ACC.
2. An adaptive cruise control apparatus for a vehicle comprising means for sensing a speed of the vehicle, means for detecting a distance between the vehicle and a preceding vehicle, means for accelerating/decelerating the first-mentioned vehicle, and means for detecting a traveling environment, in which when the distance between the first-mentioned

vehicle and the preceding vehicle is greater than the set value, a preset cruise speed is maintained whereas when the distance between the first-mentioned vehicle and the preceding vehicle is less than the set value, the distance is maintained at a predetermined value and a range of vehicle speeds to be controlled is limited, and in which, responsive to the speed of the first-mentioned vehicle increasing to come into the range of vehicle speeds immediately after the ACC is canceled due to the speed of the first-mentioned vehicle being decreased by deceleration of the preceding vehicle to thereby come out of the range of vehicle speeds during control of the distance between the first-mentioned vehicle and the preceding vehicle, a cruise speed is selected depending upon a traveling environment to be encountered at that time to automatically resume the ACC.

3. An adaptive cruise control apparatus for a vehicle comprising means for sensing a speed of the vehicle, means for detecting a distance between the vehicle and a preceding vehicle, means for accelerating/decelerating the first-mentioned vehicle, and means for detecting a traveling environment, in which when the distance between the first-mentioned vehicle and the preceding vehicle is greater than the set value, a preset cruise speed is maintained whereas when the distance between the first-mentioned vehicle and the preceding vehicle is less than the set value,

the distance is maintained at a predetermined value and a range of vehicle speeds to be controlled is limited, and in which, responsive to a predetermined operation excluding operations of a cancel switch and a main switch based on a driver's intention of canceling the ACC terminating immediately after the cancellation of the ACC, the driver driving the first-mentioned vehicle, a cruise speed is selected depending upon a traveling environment to be encountered at that time to automatically resume the ACC, and responsive to the speed of the first-mentioned vehicle increasing to come into the range of vehicle speeds immediately after the ACC is canceled due to the speed of the first-mentioned vehicle being decreased by deceleration of the preceding vehicle to thereby come out of the range of vehicle speeds during control of the distance between the first-mentioned vehicle and the preceding vehicle, a cruise speed is selected depending upon a traveling environment to be encountered at that time to automatically resume the ACC.

4. An ACC system for a vehicle in which an upper limit of a set cruise speed during actuation of a wiper is lower than during non-actuation of the wiper.

5. An ACC system for a vehicle in which, responsive to a driver of the vehicle stopping the foot-brake operation after the driver decreases its speed to 10-40 km/h by performing a foot-brake operation during traveling at a speed of 60-100 km/h in

the ACC, the ACC is maintained in a deceleration of 0-0.1 G and cancelled in a deceleration of 0.3 G.

6. The ACC system according to claim 5, wherein the set cruise speed in the ACC is changed to a value other than that set before the foot brake operation was performed.

7. An ACC system for a vehicle, wherein even when the driver performs a foot brake operation during traveling at a speed of 0-20 km/h in ACC, the ACC is maintained or automatically resumed.

8. The ACC system according to claim 7, wherein the set cruise speed in the ACC is changed to a value other than that set before the foot brake operation was performed.

9. An ACC system for a vehicle, wherein, responsive to the driver stopping an accelerator operation after increasing the vehicle speed to 125 km/h by performing the accelerator operation during traveling at a speed of 60-100 km/h, the ACC is maintained or automatically resumed.

10. The ACC system according to claim 9, wherein the set cruise speed in the ACC is changed to a value other than that set before the foot brake operation was performed.

11. An ACC system for a vehicle in which ACC is maintained or automatically resumed when the driver shifts up and cancelled when the driver shifts down, during traveling at a speed of 60-100 km/h in the ACC.

12. An ACC system for a vehicle in which ACC is maintained responsive to a driver turning a steering wheel through 0-10 degrees from a neutral position and cancelled responsive to the driver turning the steering wheel through 45 degrees or more.

13. An ACC system for a vehicle in which when the driver performs a turn-signal operation in ACC, the ACC is maintained at a vehicle speed of 80-100 km/h and cancelled at a vehicle speed of 20-40 km/h.

14. An adaptive cruise control (ACC) system for a vehicle, the system having an ACC function and comprising:

means for sensing a speed of the vehicle;

means for detecting a distance between the vehicle and a preceding vehicle;

means for detecting a traveling environment, wherein, responsive to the ACC being canceled, a cruise speed is selected depending upon a traveling environment to be encountered thereafter and the ACC in which the cruise speed is an upper limit is automatically resumed.

15. The ACC system according to claim 14, wherein a range of vehicle speeds in which a desired cruise speed is settable is provided, and wherein, responsive to the speed of the first-mentioned vehicle obtained by said vehicle speed detecting means coming into the range of vehicle speeds after coming out of the range of vehicle speeds to thereby cancel the ACC, a cruise

16. The ACC system according to claim 15, wherein the range of vehicle speeds overlaps with a second range of vehicle speeds defined between a first value to which the speed of the first-mentioned vehicle obtained by said vehicle speed detecting means comes out of the first-mentioned range of vehicle speeds and a second value to which the speed of said first-mentioned vehicle obtained by said vehicle speed detecting means comes into the first-mentioned range of vehicle speeds.

17. The ACC system according to claim 14, wherein the traveling environment detecting means comprises at least one of:

a plurality of switches one of which is to be selected by the driver;

means based on a vehicle speed;

means based on map information for car navigation (including GPS information);

means based on information such as road traffic information or automatic toll reception information received by the vehicle with the aid of radio-wave or optical means from an infrastructure;

means based on a position of a gear;

a wiper actuated switch; and

means based on a processed image signal from

Camera.

. The ACC system
The ACC is cancelled by
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eration, a steering o
eration.

. The ACC system
The ACC comprises inter
constant-speed travel c

. The ACC system according to claim 14, wherein the ACC is cancelled by at least one of a brake operation, an accelerator operation, a shift-up/down operation, a steering operation, and a turn-signal operation.

. The ACC system according to claim 14, wherein the ACC comprises inter-vehicle distance control and/or constant-speed travel control.

1. The ACC system according to claim 14, wherein the ACC comprises inter-vehicle distance control and/or constant-speed travel control.